RENEWABLE ENERGY PROGRAM

CALIFORNIA ENERGY COMMISSION

Renewables Committee Decision Summary

Renewable Energy Program Guidebooks

COMMISSION REPORT

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CALIFORNIA ENERGY COMMISSION

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INTRODUCTION

This report summarizes the Renewables Committee (Committee) decisions regarding the final proposed guidelines for continuing the California Energy Commission's Renewable Energy Program (REP) under Senate Bill 1038 (SB 1038, Sher, Chapter 515, Statutes of 2002). The decisions were made in response to parties' comments at Committee hearings on December 12 and 13, 2002.

This report is designed to help parties understand the reasoning behind the Committee's decisions with respect to the Committee Draft Guidebooks for the Existing Renewable Facilities Program and the Emerging Renewables Program. This report does not address the Committee Draft Guidebook for the Consumer Education Program or the Overall Program Guidebook for the REP, as no comments were received with respect to these guidebooks. The Energy Commission is scheduled to adopt the four Committee Draft Guidebooks at its February 19, 2003 Business Meeting.

The report summarizes the Committee's decisions and provides the rationale for those decisions, while Appendix A summarizes the issues the Committee considered and parties' comments relative to those issues.

BACKGROUND

On September 12, 2002, Governor Gray Davis signed SB 1038, which extends the REP. SB 1038 authorizes the Energy Commission to continue administering the REP beginning January 1, 2003, and extends the Energy Commission's authority to continue distributing the state's public goods charge.

To implement the legislation, the Energy Commission held staff workshops on October 28 and November 2, 2002 to solicit input from stakeholders and other interested parties on four program areas: the Existing, Emerging, Customer Credit, and Consumer Education elements.

After receiving both oral and written comments from parties at the staff workshops, the Committee issued the Committee Draft Guidebooks. The Committee then held hearings on December 12 and 13, 2002 on the draft guidebooks, which outline the proposed structure of the REP overall as well as that of the Existing Renewable Facilities Program, Emerging Renewables Program, and the Consumer Education Program elements.

Regarding the Customer Credit Program element, Public Utilities Code section 383.5(f)(2)(E) requires the Energy Commission to issue a report to the Legislature on

the Customer Credit Program by March 31, 2003. The Committee intends to address changes to the Customer Credit Program either within that report or shortly after the report is issued.

Summary of Program Changes in Senate Bill 1038

Existing Renewable Facilities Program

SB 1038 allocates 20 percent of the funds deposited into the Renewable Resources Trust Fund to existing renewable facilities, as recommended in the Energy Commission's June 2001 *Investing in Renewable Electricity Generation in California* (*Investment Plan*), which was incorporated into SB 1038 by reference. SB 1038 continues to provide funds to eligible existing renewable facilities, with the following modifications:

- The Energy Commission is authorized to re-examine and adjust the funding tier structure to reflect market and contractual conditions.

- The *Investment Plan* emphasizes the need for a flexible REP design to allow the program to respond to changing market conditions that may require the program structure to be altered and recommends allowing "modifications to the parameters (such as target prices, market prices, and caps) of the Existing Renewables Fund…"

- For first-tier biomass facilities, SB 1038 requires a time-differentiated price comparison that will provide a higher incentive when facilities receive the lowest price to encourage facilities to run the maximum feasible amount of time.

- Payments to existing facilities for generation after December 31, 2001 were suspended pending passage of SB 1038, which was passed September 12, 2002, and became effective on January 1, 2003. The one-year delay in program implementation required the Energy Commission to evaluate potential retroactive payments for 2002 generation.

Emerging Renewables Program

SB 1038 allocates 17.5 percent of the funds deposited into the Renewable Resource Trust Fund to emerging renewable technologies. In SB 1038, the purpose and structure of this element of the REP remains relatively unchanged from the *Investment Plan*.

The law specifically allows the Energy Commission to provide "…preference to systems that provide tangible demonstrable benefits to communities with a plurality of minority or low income populations." Under SB 1038, the Energy Commission shall "…develop and implement eligibility criteria and a system that provides preference to systems based upon system performance, taking into account factors, including, but not limited to, shading, insolation levels, and installation orientation."

Renewable Resources Consumer Education Account.

SB 1038 allocates one percent of the funds deposited into the Renewable Resource Trust Fund to the Consumer Education Account. As provided in SB 1038, the structure and goals of the Consumer Education Account remain relatively unchanged from the *Investment Plan*, except for reducing the proposed funding allocation from five to one percent of the fund.

RENEWABLES COMMITTEE RESPONSE TO PARTIES' COMMENTS

The Renewables Committee, Energy Commission staff, and outside parties have worked very hard to resolve issues surrounding the continuation of the Renewable Energy Program under SB 1038. The Committee would like to acknowledge the active and thoughtful participation of the parties in this proceeding and their significant contribution to developing the Committee Draft Guidebooks.

In developing the guidebooks, the Committee had to make many difficult decisions with which parties may not agree. The Committee considered all comments at the workshops and hearings, both oral and written, and based its decisions on how best to meet the requirements of SB 1038 for existing and emerging renewable technologies: to "improve the competitiveness of existing in-state renewable electricity generation technology facilities, and to secure for the state the environmental, economic, and reliability benefits that continued operation of those facilities will provide," and to "foster the development of emerging renewable technologies in distributed generation applications."

In making its decisions, the Committee also considered the overall intent of the Renewable Energy Program, as stated in SB 1038:

> It is the intent of the Legislature in establishing this program, to increase the amount of renewable electricity generated per year, so that it equals at least 17 percent of the total electricity generated for consumption in California.

Based on comments of parties and additional deliberations on issues raised at workshops and hearings, the Renewables Committee proposed several changes to the December 2, 2002 Committee Draft Guidebooks for the Existing Renewable Facilities Program and the Emerging Renewables Program. These changes were incorporated into the Committee Draft Guidebooks made available to parties on January 17, 2003, which the Energy Commission is scheduled to adopt at its February 19, 2003 Business Meeting. The rationale behind these changes is presented in the following discussion.

Because parties did not raise major issues regarding the Consumer Education Program element, the Committee did not make substantive changes to the draft Consumer Education Program Guidebook issued January 17, 2003. Similarly, parties did not comment or raise any issues regarding the Overall Program Guidebook, and therefore

the Committee did not make any substantive changes in the draft Overall Program Guidebook issued January 17, 2003.

Existing Renewable Facilities Program

Eligibility of Facilities with Fixed-price Contracts

The Committee recommends that certain facilities remain eligible for payments from the Existing Renewable Facilities Program. These facilities are those with fixed-price contracts of 5.37 cents/kWh with investor owned utilities that are otherwise eligible for program funding. These facilities meet the intent of eligible renewable resources in the statute and the *Investment Plan*.

SB 1038 indicates that the Commission should provide for time differentiation in its payment structure for the Existing Account, to incentivize additional renewable generation at times when market prices are low. The Committee believes that it is reasonable to interpret these provisions to allow eligible facilities with fixed-price contracts to receive funding from the program, as long as the fixed prices are not above the established target prices.

Parties commented that many facility owners entered into fixed-price contracts with the full confidence that they would be eligible for Renewable Energy Program payments starting January 1, 2002. Parties also stated that many facilities with these contracts do not receive the full amount of the contracted energy price due to factors such as discounts incorporated in some contracts, variable price components included in some contracts, and the use of generator meter multipliers to approximate transmission losses. Additionally, parties suggested that excluding the 90 percent of existing facilities that have signed the fixed-price contracts of 5.37 cents/kWh is inconsistent with the Legislature's intent in SB 1038.

However, three factors argue against a presumption of "full confidence" that facilities with fixed-price 5.37 cents/kWh contracts would also be eligible for and receive payments from the Existing Account. First, the Commission's *Investment Plan,* adopted before the 5.37 cent contracts were signed, clearly stated that signing such contracts would trigger a re-evaluation of the proposed funding structure for the Existing Account, indicating that if the fixed-price contracts were signed then: "… production incentives based on target prices may provide little benefit to the industry and the State."[1] The *Investment Plan* also indicated that the proposed allocation of funds to the Existing Account would be revisited when the fixed-price contracts were signed.[2]

Second, at the time these contracts were signed, the Commission had no authority to provide any payments to existing facilities because the Legislature had not passed the implementing legislation. Moreover, because the Legislature was debating additional renewable policies, it was not clear that the Commission would receive this authorization. The authorizing legislation was, in fact, not passed in the 2001 session of the Legislature, so no payments were made in 2002 to Existing Account participants.

Eventually, SB 1038 was passed on August 31, 2002, the last day of the 2002 legislative session.

Third, while the primary intent of SB 1038 was to implement the recommendations in the *Investment Plan*, the Legislature was free to accept or reject any specific recommendation in the *Investment Plan*. Given the possibility of legislative change, the Energy Commission could not be certain that allocations, target prices, or other protocols for the Existing Account would remain as recommended in the *Investment Plan*.

In fact, while the Legislature did modify some components of the *Investment Plan* in SB 1038, it incorporated the remainder by reference, including the statements indicated above concerning re-evaluating the Existing Account if fixed-price contracts were signed. The Legislature knew that these contracts had been signed when enacting SB 1038, yet did not modify or constrain the Commission's clearly-stated intent to re-evaluate the structure of the Existing Account. Instead, the Legislature left this decision up to the Commission.

The Committee concludes that the intent of SB 1038 to encourage existing renewable generation in the state is best served by allowing continuing eligibility for certain facilities with fixed-price contracts of 5.37 cents/kWh.

Market Price Calculation for Fixed-Price Contracts

While the *Investment Plan* indicates that facilities with high fixed-price contracts would be ineligible for the program, SB 1038 explicitly denies payments *only* when monthly average prices are higher than the corresponding target price for a facility.

For facilities with fixed-price contracts for a majority of their generation, the Committee recommends that the market price be the fixed monthly average energy price as specified in the contract. Several parties commented that excluding fixed-price contracts from the eligible projects for funding under the Existing Renewable Facilities Program as proposed in the December 2, 2002 Committee Draft Guidebook would result in significant losses in environmental and economic benefits that California derives from their operation. Others commented that the exclusion of fixed-price contracts was unresponsive to SB 1038 requirements for time-differentiated pricing that would provide higher incentives when facilities receive the lowest price. The Committee concludes that eliminating the previous exclusion and paying facilities with fixed-price contracts the fixed monthly average energy price in their contracts addresses both of these concerns.

For parties that signed the 5.37 cents/kWh contracts with Pacific Gas and Electric Company, the market price will be approximately 6.0 cents/kWh during the winter period and 4.7 cents/kWh during the summer period, according to the structure of those contracts. Paying these facilities in the summer months when the market price is less than the proposed 5.37 cent target price (for 2003-2006) will induce these facilities to generate more in these months, consistent with the intent of SB 1038.

For facilities with contracts with Southern California Edison Company, the market price will be 5.37 cents/kWh for every month of the year, according to the structure of these contracts. While these facilities are eligible for payments, they will receive no production incentives for generation after 2002 because their market price is equivalent to the target price of 5.37cents/kWh.

Some solar thermal facilities receive 75 percent of their payments based on a fixed 5.37 cents/kWh, and 25 percent based on a variable short-run avoided cost (SRAC) due to their use of natural gas. Representatives for these facilities have argued that they should have a different market price that is equivalent to the monthly varying SRAC for the 25 percent of their generation that does not receive 5.37 cents/kWh. Further, they argue that the facilities operate at a loss when using natural gas, because their heat rate and operation and maintenance costs are higher than those used in calculating SRAC.

The Committee does not believe these facilities should have a different market price for the 25 percent of their generation that does not receive 5.37 cents/kWh. While the Committee has not independently verified the parties' claims, the Committee notes that even if the facilities do operate at a loss when using natural gas, under their contracts they typically use natural gas during peak periods so that they can earn full capacity payments. The Committee notes that any losses from SRAC energy payments while burning natural gas are clearly offset by gains in capacity payments. Incentives from the REP for the natural gas portion of these facilities' generation are unlikely to encourage a significant increase in generation, because the facilities will already be generating to achieve their capacity payments.

The Committee also notes that the SRAC formula applies in general to affected contracts, without regard to each facility's unique heat rate or operations and maintenance expenses. Other facilities may also have higher heat rates and operations and maintenance expenses, but these are not factored into their contract payments. Finally, the loss of energy payments due to the difference in heat rate from the SRAC calculation will be exacerbated at higher natural gas prices. These facilities lose the least amount of money per kWh at SRAC prices below the target price, while they are stating they need additional incentives because of that loss.

Other facilities with discounted contracts, in which the fixed-price portion of their generation receives less than 5.37 cents/kWh, are in a different situation. The representatives for these facilities argued that they, in effect, receive a different market price for a majority of their generation than all other facilities on the 5.37 cent/kWh contracts. The Committee agrees and sets the market price for these facilities as the average fixed energy price that they receive for the generation. These facilities will receive production incentive payments when their applicable market price is below the 5.37 cent/kWh target price. These facilities are the earliest, least-efficient solar thermal facilities, and, where possible, will use the production incentives to modernize, extend the service life of, and increase generation from their facilities to provide continuing and expanding clean, renewable, peak generation to California.

Retroactive Payments for 2002 Generation

Parties generally agreed that business decisions during 2002 were made under the assumption that payments for 2002 generation would be forthcoming, either under the new program rules in the implementing legislation or under an extension of the SB 90 program. In general, most parties expected payments to be made retroactively once SB 1038 was passed and took effect. The Commission staff indicated this intent, in the absence of contrary legislation, in a letter to Existing Account stakeholders that was mailed on March 8, 2002.[3] Several parties stated they had sufficient confidence in the expected payments to include these payments in their financial statements as receivables.

Retroactive payments became an issue when the legislation authorizing the Commission to develop a revised Existing Account program was not passed in the 2001 legislative session. The Commission had three options at that time:

1. Extend the 1998-2001 Existing Account into 2002 until implementing legislation passed and took effect, provided there was adequate funding to do so.
2. Specify an intent to pay for generation in 2002 retroactively under the new rules in the pending legislation once it had passed.
3. Announce that payments would not be made for generation in the period between the end of the SB 90 program, December 31, 2001, and the effective date of the continued program under SB 1038.

The Commission staff's March 8 letter signified an intent to use option 2 above, but did not guarantee that the eventual decision would follow this option.

The Committee initially decided not to make payments for 2002 generation. First, program rules were not in place at the time of that generation, so production incentives for that generation may be assumed to have no legal basis. Second, because production incentives were not assured for this period of time, it is not clear that the generation was induced or supported by production incentives, or would have happened without production incentives.

However, parties indicated that the assurance of production incentives was strong enough, given the staff's March 8, 2002 letter and other indications, that many counted on these incentives in financial decisions at the time. Clearly, the Legislature and Commission did not intend a gap in production incentive payments. That gap was an unfortunate consequence of the delay in implementing legislation. Parties were acting upon expectations of regulatory and program stability and certainty, as reflected in the staff's March 8, 2002 letter.

Consequently, the Committee recommends that payments be made to eligible program participants for 2002 generation. For 2002, the recommended target price for Tier 1 facilities is 5.5 cents/kWh, consistent with the target price recommended in the *Investment Plan* for that period. All other target prices shall remain as specified in the December 2002 Committee Draft Guidebook.

Adjustments for Inflation in Target Prices and Caps

Several parties have argued for adjusting target prices and payment caps for inflation on an annual basis. Indeed, SB 1038 requires the Commission to consider inflation in developing the structure of the Existing Renewable Facilities Program. This language, parties argued, indicates the Legislature's intent that the target prices and caps be adjusted for inflation. The Committee disagrees and believes that the plain language of the law requires the Commission only to *consider* inflation adjustments.

The Committee has considered the usefulness of annual inflation adjustments, but believes that such adjustments are not good public policy and are inconsistent with the general intent of the Existing Renewable Facilities Program. While per-unit labor and other input costs of generating renewable energy may escalate over time, these costs may also decline. For example, fuel costs are a major cost for biomass facilities, but these costs rise and fall depending upon demand and supply for these fuels. In addition, even as per-unit input costs rise, enhancements in productivity mean that fewer units of input are necessary for each unit of output, reducing overall costs. Depending upon the relative magnitude of any per-unit input cost increases and any productivity improvements, the need for increased revenue for each kWh of generation may increase, decline, or remain constant.

In general, however, production incentives for existing facilities have been structured to decline over time, reflecting a historical program intent that these incentives be phased out. Under the SB 90 program, which ran from 1998-2001, target prices, fund allocations, and payment caps were all scheduled to decline over time to reflect a phasing-out of these incentive payments. Cost-shifting, expense reductions, and increases in productivity were expected to allow most existing renewable facilities to generate, in time, without needing production incentives.

However, cost-shifting did not occur to the degree expected at the start of the SB 90 program, which the Commission took into account by increasing the target prices for Tier 1 facilities from four cents/kWh to five cents/kWh in late 2000.

Although the Committee no longer believes that it is prudent to structure the Existing Renewable Facilities Program to expect significant cost-shifting, it is reasonable to expect increases in productivity that may, to an unknown degree, offset the impacts of inflation on input costs. Indexing the target prices and payment caps for inflation now would imply that productivity improvements will not be forthcoming. In addition, conventional power generation is also affected by inflationary pressures. Indexing target prices and payment caps for inflation implies that inflationary cost increases will affect these industries equally, so that existing renewable generation will always require a nominal dollar incentive structure to remain competitive. This expectation ignores the general principle that more of the cost of renewable generation is incurred in capital expenditures that are not subject to inflationary pressures for existing generation.

Finally, the Committee notes that the fixed-price 5.37 cent/kWh contracts signed by a majority of the facilities eligible to participate in the Existing Renewable Facilities Program do not contain an adjustment for inflation over their five-year fixed-price period. At this time, the Committee does not see any reason to include an adjustment for inflation in the public goods charge portion of the revenue stream for facilities under these contracts, when an adjustment for inflation is not included in the revenue stream from the underlying market sale of generation from these facilities. However, the Committee does plan to revisit the issue of inflation adjustments in the future and, if appropriate, make necessary changes to target prices to account for changing market conditions.

Time-differentiated payments

SB 1038 states: "For the first tier biomass technologies, the Energy Commission shall establish a time-differentiated incentive structure that encourages plants to run the maximum feasible amount of time and that provides a higher incentive when the plants are receiving the lowest price."

Parties asserted that SB 1038 requires the Energy Commission to include a time-differentiated structure for the Existing Renewable Facilities Program to maximize generation from Tier 1 biomass facilities. The biomass industry argued that language referring to a time-differentiated structure was included in SB 1038 to provide additional or increased incentives to facilities during those periods when time-of-use revenues fall below marginal cost of production. According to the biomass industry, these periods occur because the fixed-price 5.37 cent/kWh contracts pay less for kWh in some time periods, but more for kWh in other time periods. In these lower revenue periods, costs may be above revenues, implying that additional incentives would induce additional generation.

However, this additional generation would occur at off-peak times when the state already has a surfeit of must-take electricity because of contracts signed during the electricity crisis in 2001. While additional biomass generation in these periods should provide commensurate additional environmental benefits, system reliability benefits are not provided, and additional system costs may be incurred. These factors should not preclude incentives for additional biomass generation, but should be considered. While the complexity of a time-differentiated structure does present some administrative difficulties, the Committee believes those difficulties are outweighed by the need to be responsive to the intent of the language in SB 1038 on time-differentiation. The Committee, therefore, recommends giving Tier 1 facilities a one-time choice to have their market price based either on average monthly energy prices or on time-of-use (TOU) energy prices, with the chosen method remaining in effect until the end of 2006. To receive incentive payments based on TOU energy prices, third-party statements submitted must clearly summarize generation by TOU periods. The TOU periods considered will be those specified in the investor-owned utility contracts (i.e. on-peak, partial-peak, mid-peak, off-peak, and super off-peak. However, for facilities that receive energy prices that fluctuate at regular intervals and are not known in advance, the Energy Commission will make payments based on average monthly energy prices.

Change in Target Price

Parties requested that the target price for Tier 1 technologies be raised to 5.5 cents/kWh, as recommended in the Energy Commission's June 2001 *Investment Plan*, stressing that when the target price dropped in the SB 90 program, biomass facilities were unable to generate. Parties also noted that as biomass projects generate more and more energy, they must purchase higher cost fuel, which adds to operating costs; therefore, without the higher target price, these projects will not operate during the higher cost periods.

The *Investment Plan* proposed a Tier 1 target price of 5.5 cents/kWh for 2002 through 2006. However, it also stated that the Energy Commission would revisit the program structure, including caps and target prices, if market conditions changed. One such change specifically mentioned in the *Investment Plan* was the signing of fixed-price contacts. When the Commission adopted the *Investment Plan*, the Legislature and others had attempted to establish such contracts in response to the electricity crisis, but such contracts had not yet been finalized.

The Committee believes that establishing a target price of 5.37 cents/kWh equivalent to the fixed energy price reflected in the contracts is an appropriate response to these contracts. In signing these contracts with a fixed 5.37 cents/kWh energy price over five years, these facility owners indicated that the facilities have sufficient revenue to operate given that energy price. Some parties claimed that the facility owners signed these contracts to ensure payments the utilities owed them for electricity generated over several months during the state's energy crisis. However, the Committee notes that during those same months, wholesale electricity prices were quite high by historical standards. The 5.37 cent/kWh contracts are not an exception, because this energy price is also significantly greater than the historical average of 3-4 cents/kWh. In addition, since these contracts were signed, SRAC prices have generally been significantly below the 5.37 cent level embodied in the contracts.

This argument is difficult to sustain given that facilities apparently operated profitably before the onset of the energy crisis, when average energy revenue during the non-crisis months in 1998-2001 was approximately 4.5 cents/kWh, including incentive payments from the Existing Account. During the six-month period when the electricity crisis was at its height, incentives were not received from the Existing Account, yet average energy prices were approximately 13 cents/kWh.

Parties argue that facilities in Tier 1 will generate less with a target price of 5.37 cents/kWh rather than the target price of 5.5 cents/kWh proposed in the *Investment Plan*. However, any reduction in output will come during the off-peak and super off-peak hours when the state has sufficient power to meet its forecasted needs for most, if not all, of 2003-2006.

The Committee believes that the proposed target price of 5.37 cents/kWh for 2003 to 2006 is sufficient to ensure that Tier 1 facilities will continue to operate. The Committee does not believe that increasing the target price to 5.5 cents/kWh for 2003 to 2006, as

proposed in the *Investment Plan*, would induce enough additional generation to justify the increased system costs. If this situation were to change in the future, the Energy Commission has the flexibility and authority to make any necessary changes in the program.

Emerging Renewables Program

Rebate Levels and Rate of Incentive Decline

Parties stated that the rebate level of $4/Watt in the Committee Draft Guidebook for the Emerging Renewables Program was insufficient, and that the recommended rate of decline, $0.25 per six-month period, was too steep. Parties also stated that for the Energy Commission regularly to review the decline in incentive promotes uncertainty in the market and would be detrimental to the industry.

Regarding wind turbines, the American Wind Energy Association (AWEA) suggested the following tiered pricing structure:

1. $3/Watt for the first 7.5 kW
2. $2/Watt for 7.501 - 15 kW
3. $1/Watt for 15.01 kW to 30 kW

The Committee recognizes that the $4/Watt rebate level is a significant change from the current $4.50/Watt level; at this time, however, the Committee believes that funding allocations for the Emerging Renewables Program require a change in rebate levels of this magnitude.

In 2001, the Commission reserved about $50 million for new systems. In 2002, the Commission reserved $47 million and ran out of funds in October. At the November 1, 2002 staff workshop, parties argued that the main concern was the lack of funding through 2002. The continuing program in 2003 allocated about $24 million per year, or a total of about $125 million over five years. If rebate levels are not reduced significantly, these funds will not cover a level of program interest similar to that of 2001 and 2002 for the full five years.

The Committee believes that it is less disruptive to the industry to reduce rebate levels now, to prepare for a possible funding shortfall, than to continue at current rebate levels only to run out of funding well before the end of 2006. The Committee wishes to avoid any repeat of the events at the end of 2002 when funds were exhausted, creating a four-month gap in rebate availability.

The Committee also observes that recent decreases in system costs justify a decrease in rebate levels. Many systems installed in the last two years have received rebates at a rate lower than the $4.50 maximum because the rebates were limited to 50 percent of system cost. Because the proposed Emerging Renewables Program does not contain a percentage limit, the $/Watt rebate level must be reduced significantly to maintain the intent of paying on average 50 percent or less of system cost.

For these reasons, the Committee continues to recommend an initial $4.00/Watt rebate level for photovoltaic (PV), solar thermal, and fuel cell systems.

The solar industry proposed that rebate levels decline at five percent per year, matching a historical average decline in PV costs. The December Committee Draft Guidebook proposed a decline of $0.25/Watt every six months, equivalent to about a 12.5 percent decline by 2004.

Assuming that system cost continues to decline at five percent per year, if rebate levels decline at the same rate, the net system cost to consumers will be significantly less over 10 years. The increased demand likely to result is not clearly supported by the program budgets over this period. In addition, under this plan, the percentage of system cost covered by the rebate remains constant. The Committee believes that as costs are reduced, the percentage of system costs covered by rebates should generally decline, to avoid a sharp disruption in the industry at the end of the rebates. Finally, the Committee cannot assume that the program will continue beyond 2011. A five percent per year decline in rebate levels leaves a rebate of over $2.50 cents in 2011, and leaves the industry with a potentially sharp disruption if it moves beyond 2011 without rebates.

However, the $0.25 decline every six months that was proposed in December leads to gradually increasing net cost to the consumer, assuming a five percent decline in system costs per year. The Committee notes that an increasing net cost to the consumer is inconsistent with program goals of increasing consumer demand for emerging systems. The Committee also notes that the rebates along with the dramatic growth in consumer interest and industry infrastructure should lead to more rapid decreases in system costs than historical averages.

The Committee believes that the program should be structured to reflect currently expected budgets, avoid end-of-program disruptions in the industry, and maintain and if possible, increase the current rate of installations. The Committee proposes to balance these goals by recommending a decline in incentive levels of $.20/Watt rather than $0.25/Watt every six months. In addition, the Committee recommends that these declines should occur every six months without the Energy Commission's automatic review as originally proposed in the December 2, 2002 Committee Draft Guidebook. The Committee believes, consistent with solar industry comments, that the uncertainty associated with scheduled reviews outweighs any benefits.

In response to the American Wind Energy Association's comments, the Committee recommends revising the rebate structure for small wind systems as follows: $2.50/Watt for the first 7.5 kW and $1.50/Watt for increments above 7.5 kW up to 30 kW. In reviewing the comments and Commission data, the staff confirmed that wind system prices increased considerably in 2002 compared to 2001. Parties stated that the increased price is due to demand for free standing towers instead of guyed towers. Based on the higher 2002 cost data, the proposed incentive is close to 50 percent of the median-priced system cost, and appears to be the best compromise. A higher incentive structure would pay more than 50 percent of the cost for a majority of these systems.

The Committee acknowledges the comments of the International Brotherhood of Electrical Workers (IBEW) and appreciates the skills and training opportunity afforded to IBEW electricians from the experience of installing PV systems on their own homes. In response to IBEW and other concerns, the Committee recommends that the primary and secondary rebates proposed in the December 2002 Committee Draft Guidebook be replaced by a 15 percent discounted rebate for self-installed systems over contracted installations. This discount is significantly reduced from the $1.00/Watt discount (for PV, solar thermal, and fuel cell technologies) and $0.50/Watt discount (for wind technologies) for self-installed systems contained in the December Committee Draft Guidebook. The discount reflects the fact that self-installed systems cannot provide a complete five-year installation warranty required for contractor-installed systems.[4]

All owner-installed systems are eligible for the same rebate whether installed by a licensed contractor, an electrician, or an individual. Because owners who install systems themselves typically do not incur labor expenses, a lower incentive is appropriate for these installations. Any person qualified to do his or her own installation may hire a licensed contractor to do the work instead and claim the higher rebate.

System Output Warranties

Parties overwhelmingly agreed that providing warranties for system output is impossible because the variables that affect system performance are, in most cases, beyond the control of the manufacturer.

The Committee, therefore, has removed the requirement to warrant the annual system energy production of the system. However, companies are still required to submit an energy estimate on the Reservation Form and may choose to warrant this estimate if they wish.

Funding Split between Residential/Commercial Systems

The Committee Draft Guidebook allocated only $10 million for systems 30 kW and larger in size, and earmarked that funding for a pilot performance-based funding structure for these larger systems. The California Public Utilities Commission's (CPUC) Self Generation Incentive Program provides buydown funding for these larger systems, and funding from the Emerging Renewables Program is, therefore, duplicative. However, several parties asserted that the funding set aside for systems 30 kW and larger in size was insufficient and noted that the CPUC program is scheduled to expire at the end of 2004, leaving these systems without any funding support.

The Committee notes that the Energy Commission is aware of the scheduled end-date of the CPUC's program and will work with the CPUC to address this potential funding shortfall for larger systems. At this time, the Committee believes that it is best to continue to develop and implement a performance-based incentive while clear alternative funding is available from the CPUC's program. By gaining experience with performance-based incentives for systems 30kW and larger in size, the Energy Commission's approach should be refined and operational at the currently scheduled

end of the CPUC's program. The Committee encourages parties to continue to work with the Energy Commission to develop performance-based incentives.

Performance-Based Incentive System

Most parties agreed that a performance-based incentive system is desirable in concept, but difficult to design and implement without extensive analysis and consideration by both the Energy Commission and the industry.

The Committee, therefore, recommends that the funding for the performance-based program for systems 30 kW or larger in size still be reserved for this purpose, but that the program not be implemented at this time. The Committee recommends that the staff proceed to develop and refine a performance-based incentive for future implementation.

Interconnection Agreement Requirement

All parties agreed that requiring a utility interconnection agreement before rebates are paid is a burden due to the length of time often required to obtain such an agreement. Many of the companies participating in the program are small businesses, without large enough cash reserves to cover customer rebates for the two to four months it often takes for utilities to finalize the interconnection agreement.

The Committee, therefore, recommends that rather than the utility interconnection agreement, parties must submit a signed copy of the utility interconnection applications. However, a letter of authorization to interconnect with the utility is required to be submitted once received by the applicant.

Funding Allocation

Several parties stated that the 17.5 percent funding allocation for emerging renewable technologies was insufficient, and that funds from the customer credit and/or consumer education elements of the REP should be reallocated to emerging renewable technologies.

In its *Investment Plan*, the Energy Commission recommended a funding allocation of 15 percent for emerging renewable technologies, which represented a five percentage point increase from the SB 90 program's allocation of 10 percent. When this recommendation was made, the energy crisis in California had caused a significant increase in participation in the Emerging Buydown Program, but a substantial amount of funds remained in the Emerging Buydown Program, particularly for small systems. In response to the energy crisis, additional resources were directed toward customer generation systems. The CPUC initiated a companion self-generation incentive program, the rebates in the Emerging Buydown Program were raised from $3/Watt to $4.50/Watt (or 50 percent of costs), and an additional $30 million was allocated for rebates by Assembly Bill 29x (AB29x, Kehoe, Chapter 8, Statutes of 2001, 1st Extraordinary Session).

Consumer interest in the Emerging Buydown Program was high enough throughout 2001 and 2002 to induce the Commission to add funding once again to the program. An additional $29.2 million was reallocated from other elements of the Renewable Energy Program in 2001 and 2002. With all the funding additions, the Emerging Buydown Program was eventually allocated approximately 20 percent of the total $540 million allocated under SB 90. However, despite the additional funding, the Buydown Program ran out of money in October 2002.

SB 1038 established an initial allocation level for the Emerging Renewable Program of 17.5 percent, 2.5 percentage points greater than the *Investment Plan* recommended. If funding requests continue at the rate in 2001 and 2002 with no change in rebate structure, this level of funding may prove insufficient. With a new rebate structure and changing market circumstances over time, however, this level of funding may be sufficient. To minimize disruptions to the industry and help create a self-sustaining market for renewable energy systems that supply on-site electricity needs, the Committee believes that the funding allocation set in SB 1038 combined with a lower and declining rebate is the appropriate level at this time.

Special Funding for Affordable Housing Projects

In response to concerns raised at the Committee hearing, the extra rebate available for affordable housing projects was lowered. Rather than 50 percent over the standard rebate, the Committee proposes a cap of 25 percent above the standard rebate level, not to exceed 75 percent of the system cost and subject to the same criteria as specified in the December 2002 Committee Draft Guidebook.

ENDNOTES

[1] *Investing in Renewable Electricity Generation in California*, June 2001, publication number 500-00-022, page 39.
[2] Ibid, page 44.
[3] Attached as Appendix B.
[4] While the Committee generally expects self-installed systems to be also self-maintained and repaired, this is a self-imposed obligation that does not translate to a new business or homeowner as does the five-year full installation warranty required for contractor installations.

Appendix A
SUMMARY OF PARTIES' COMMENTS

This appendix summarizes the major issues raised in the parties' verbal and written comments regarding the Renewable Committee's draft guidebooks issued December 2, 2002. The comments are presented for each guidebook and have been grouped into broad categories.

Because parties did not raise major issues regarding the Consumer Education Program element, the Committee did not make substantive changes to the draft Consumer Education Program Guidebook issued January 17, 2003. Similarly, parties did not comment or raise any issues regarding the Overall Program Guidebook, and therefore the Committee did not make any substantive changes in the draft Overall Program Guidebook issued January 17, 2003.

Existing Renewable Facilities Program

Comments on the Committee Draft Guidebook for the Existing Renewable Facilities Program fell into five general categories:

1. Eligibility of facilities with fixed-price contracts
2. Retroactive payments for 2002 generation
3. Adjustments for inflation in target prices and caps
4. Time-differentiated payments
5. Change in target price

Eligibility of Facilities with Fixed Price Contracts

The December 2, 2002 Committee Draft Guidebook for the Existing Renewable Facilities Program proposed excluding existing facilities with fixed price contracts from participation in the Existing Renewable Facilities Program (i.e., any contract with an annual average energy price that is known in advance to be greater than or equal to the applicable target price).

- ***Independent Energy Producers***

  In comments presented at the December 13, 2002 workshop, the IEP stated that renewable facilities entered into fixed price (i.e., 5.37 cent) contracts with the utilities with the expectation that they would still be eligible for subsidies from the Renewable Energy Program. The IEP also contends that many companies entered into the 5.37 cent contracts to ensure that they would receive the back payments the IOUs owed them. In addition, the IEP asserted that excluding projects with these contracts would mean excluding approximately 90 percent of existing facilities, and that if this had been the Legislature's intent, they would have stated that explicitly in the law. The IEP also observed that many of the parties with the 5.37 cent/kWh contracts were the same parties who were instrumental in getting Senate Bill 1038 passed,

implying that it would, therefore, be unfair to exclude them from benefiting from that legislation.

- ***California Biomass Energy Alliance***

  The CBEA said at the December 13, 2002 workshop that 5.37 cents/kWh is not a high payment, particularly for biomass facilities that must use fuels with higher costs at certain times. In addition, the 5.37 cents is actually lowered by as much as 10 percent by the application of generation meter multipliers by the ISO. Also, several facilities with discounted contracts do not receive a full 5.37 cents/kWh. The CBEA also emphasized that it is cheaper to keep existing plants in business than to build new ones, and that once plants shut down, it not only takes years to get them started again, but it also takes years to re-establish the infrastructure associated with those plants. The CBEA stated that if facilities with fixed price contracts are excluded from the REP subsidies, these facilities will no longer be able to afford higher cost fuels such as orchard prunings and forest slash, resulting in a drop in biomass output alone of 1.5 billion kWhs per year, or 25 percent of existing generation. In addition, open burning of agricultural waste and danger of forest fires will increase. The CBEA stressed that shifting these funds to new projects is false economy, as it is unlikely that new projects will be able to generate the 1.5 billion kWhs lost from the biomass plants as cheaply as with a relatively small subsidy to existing biomass facilities.

- ***California Wind Energy Association***

  The CalWEA stated that there is a need to preserve the existing base of renewables for the Renewable Portfolio Standard to work, and that investments in new facilities are often made by developers of existing facilities. These investments are often based on trust in the REP subsidy program, and if the subsidies disappear, so may investment in new facilities in California.

- ***HL Power Company***

  The HL Power Company said they are located in a rural part of California, and that if the facility is forced to cut back on operations because of the loss of funding support for biomass facilities, it will have a large impact on the amount of taxes the facility pays to the county. In addition, the HL Power Company asserts that its facility already faces reductions of about five percent in its energy payments because of the generation meter multiplier, as well as further reductions because of line losses to PG&E. The HL Power Company contends that they provide good paying jobs for the local community plus the support of fuel gathering programs in the area, and that the area would be hit hard if those jobs were lost. The facility intends to remain in operation, but will have to reduce its generation. The HL Power Company maintains that their facility provides additional benefits to the state by helping to fireproof the state's forests, and that once these types of biomass plants stop operating, there will be no place to put that material.

Retroactive Payments for 2002 Generation

The Committee Draft Guidebook for the Existing Renewable Facilities Program proposed not making retroactive payments for generation from existing facilities for calendar year 2002.

- ***Independent Energy Producers***

  The IEP asserted that existing projects would not have generated as much in 2002 without their assumption that they would be paid the REP subsidy for their 2002 generation, as for many hours generating would not have been economic without the subsidy. Their assumption was based on the Energy Commission's June 2001 *Investment Plan*, as well as on the March 8, 2002 letter[1] and October 16, 2002 notice of hearing[2] which referred to staff's intent to make subsidy payments for 2002 generation. In addition, SB 1038 essentially adopted the Energy Commission's *Investment Plan*, which clearly stated the Energy Commission intended to pay for 2002 generation. The IEP also stated that in today's market, regulatory certainty is of paramount importance, and that the Energy Commission should continue to revise guidebooks on a "going-forward basis."

- ***California Biomass Energy Alliance***

  The CBEA stated that funding was collected in 2002 for the REP with the expectation that once the Legislature approved the program going forward, retroactive payments would be made. The Energy Commission's June 2001 *Investment Plan* included an allocation based on projects being paid in 2002, and that *Investment Plan* was approved by the Legislature in SB 1038. In fact, existing biomass plants generated at full capacity during 2002 based solely on their expectation of payments for that year's generation.

- ***FPL Energy***

  According to FPL Energy, many project operators made business decisions over the past year based on their expectation of receiving retroactive payments, decisions such as purchasing higher cost fuel or including the value of subsidy payments in the value of facilities that were sold or purchased. In addition, this expectation of receiving subsidy payments for 2002 generation was taken into consideration in projects' choice of contract terms in the 5.37 cent contracts (such as a floating short-run avoided cost).

Inflation Adjustments

The Committee Draft Guidebook for the Existing Renewable Facilities Program recommended that there be no adjustment for inflation for either target prices or caps.

- ***Independent Energy Producers***

  The IEP stated that although the *Investment Plan* recommended no inflation adjustment, the Legislature obviously believed that it was important enough to include in SB 1038.

- ***California Biomass Energy Alliance***

  The CBEA contended that the consumer price index adjustment is particularly important as the cost of marginal fuel for biomass is subject to inflation.

- ***California Wind Energy Association***

  The CalWEA stated that the REP is intended to provide funding to bridge the gap between project revenues and the costs of generation. Because those costs increase with inflation, so too should the subsidy. The CalWEA also stated that they would have sought more explicit language regarding inflation adjustments in the legislation had the Energy Commission staff not assured them that the existing language was sufficient to ensure that the inflation adjustments would be made.

Time-differentiated Payments

The Committee Draft Guidebook for the Existing Renewable Facilities Program proposed determining market prices based on either the monthly time-period weighted average short-run avoided cost (SRAC) for each of the three major utility service areas for facilities with investor-owned utility contracts, monthly average energy price for facilities with fixed price contracts for a majority of their generation, or the actual energy price for facilities not falling under either of those provisions. The Guidebook did not propose to make incentive payments based on actual time of generation rates.

- ***California Biomass Energy Alliance***

  The CBEA stated that Senate Bill 1038 requires the Energy Commission to maximize payments based on time of generation. Biomass plants in particular have high fuel and operating costs, and the intent of the language regarding the time of use differential was to recognize that biomass plants have high and rising marginal costs at high capacity factors, yet are compensated at relatively low rates at certain time periods, even the 85 percent of plants that fall under the 5.37 cent/kWh substitute SRAC. The CBEA contends that the concept of the SB 1038 legislation was to direct existing funding to plants during those periods when marginal costs are above revenues. The CBEA also states that the reason for this was to secure the environmental and economic benefits Californians derive by the operation, not the mere existence, of these plants. The CBEA asserts that the public goal of the legislation is to operate existing biomass plants as much as is feasible, and a time differentiated payment structure is necessary to meet that goal.

Changes in Target Price

The Committee Draft Guidebook for the Existing Renewable Facilities Program set the target price for Tier 1 (biomass and solar thermal) facilities at 5.37 cents/kWh for 2003 through 2006.

- ***Independent Energy Producers***

  The IEP stated that the Energy Commission *Investment Plan* established a target price for Tier 1 technologies of 5.5 cents/kWh, based on its experience with the Senate Bill 90 (SB 90, Sher, Chapter 905, Statutes of 1997) program. Under SB 90, the target price decreased with the expectation that cost shifting would occur, particularly among the Tier 1 technologies. When that cost shifting failed to happen and the target prices dropped in the SB 90 program, biomass facilities were unable to generate as much electricity. The IEP contended that the drop in generation was the basis for the Commission's recommendations regarding the target price contained in the *Investment Plan*, and the Legislature essentially agreed with the tier pricing in the plan by passing SB 1038. The IEP also claimed that a marginal increase in the tier funding (i.e., from a target price of 5.37 cents/kWh to 5.5 cents/kWh) is significant in terms of achieving an incremental increase in generation from existing facilities, which is important because reducing cost effective output from existing facilities will impair the ability of the IOUs to meet the RPS standard.

- ***California Biomass Energy Alliance***

  The CBEA stated that most biomass facilities have a supply of local, relatively cheap fuel that will allow them to run at a low annual capacity factor. It is good business practice for these facilities to use that fuel during periods when the revenues per kilowatt hour are the greatest. The CBEA asserts, however, that as the facility operates more, fuel costs begin to rise steeply as the facility must reach out further to acquire fuels such as agricultural and forest waste, which have high collection and processing costs. While the use of these fuels provides the greatest environmental and economic benefit to Californians, as open burning of agricultural waste is avoided and forest health is improved, the high cost of fuel exceeds the revenues received by the facilities at certain time periods. Under the 5.37 cent contracts, revenues can fall as low as 4 cents per kilowatt hour and are further degraded by the application of generation meter multipliers. The CBEA, therefore, contends that without a 5.5 cent/kWh target price, the facilities will not produce energy during those high cost periods, and California will not gain the benefit of proper disposal of these waste materials.

Emerging Renewables Program

Comments on the Emerging Renewables Program fell into eight general categories:

1. Rebate level/rate of incentive decline
2. System output warranties

3. Funding split between residential/commercial systems
4. Interconnection agreement requirement
5. Performance-based incentive system
6. Funding allocation
7. Miscellaneous issues
8. Special programs

Rebate Level/Rate of Incentive Decline

The December 2002 Committee Draft Guidebook for the Emerging Renewables Program set the rebates as follows:

	PV, Solar Thermal, Fuel Cell <30kW	Wind <30kW	
		1st 5 kW	Increments above 5 kW
Professionally Installed	$4.00/watt	$2.50/watt	$1.50/watt
Owner or Self-Installed	$3.00/watt	$2.00/watt	$1.00/watt

For systems 30 kW and larger in size, incentives would be offered through a pilot performance-based system based on systems' annual energy output without a limit to the percentage of system cost funded by the incentive. All the above incentives would decline by $0.25 every six month starting July 1, 2003, unless the Energy Commission decided to extend the funding level for an additional six months.

- ***California Solar Energy Industries Association and Various Parties***

  The CalSEIA and various members of the CalSEIA stated that the rebate level in the Committee Draft Guidebook was too low and that the decline in incentives was too steep. They instead proposed a rebate of $4.25/watt, with a five percent decrease in incentive per year. Regarding the timing of the reductions, the CalSEIA and others stressed that the industry needs predictability and long-term certainty, and revisiting the incentive level every six months will cause problems.

- ***Schott Applied Power***

  Schott stated that predictability and availability of the funds are the most important elements of the program, and encouraged the Commission to specify the rebate level well in advance along with any expected changes over time. Schott agreed with the CalSEIA's position that lack of predictability will cause additional problems within the industry rather than providing any solutions.

- ***Bergey Windpower Company/American Wind Energy Association***

  Bergey/AWEA argued that they believe the cuts in the incentive level for small wind (under 30 kW) were far too severe, and that the Commission's cost estimates used

to determine those incentive levels were based on old data from the early days of small wind when systems were discounted to establish the market. The AWEA proposed an alternative structure of $3/watt for the first 7.5 kW, $2/watt incremental from 7.501 kW to 15 kW, and $1 for 15 kW to 30 kW. AWEA also proposed a decline of 15 cents per six month period.

- ***Sacramento Municipal Utility District***

  The SMUD stated that the rebate levels are too low, and while they endorse reducing the incentive level over time, the method chosen is not flexible enough to meet the needs of the industry. The SMUD suggested using a formula based on actual recent sales data for these types of systems or else setting up a block system similar to the one originally used in the Emerging Buydown Program in 1998.

- ***Real Goods Trading Company***

  The Real Goods Trading Company stated that dropping the rebate to $4 per watt may not reduce demand for these systems enough to prevent funds from being prematurely exhausted, and the rebate may need to be reduced more than 25 cents every six months.

- ***Power Top Solar***

  The Power Top Solar expressed concern regarding the incentive level that the Energy Commission would apply to applications received as of October 31, 2002, and stressed that because the industry rushed to get those applications in by the Energy Commission-imposed deadline, those systems should be funded at the $4.50/watt level offered then to ensure that the systems were indeed installed.

- ***George Ingham, International Brotherhood of Electrical Workers (IBEW)***

  The International Brotherhood of Electrical Workers (IBEW) argued that certified journeymen electricians who install and warrant photovoltaic (PV) systems on their own homes should receive the same rebate level as homeowners that pay a licensed contractor to install and warrant the PV system for them. They argued that it is unfair to award a $3.00 rebate instead of a $4.00 rebate to the IBEW electricians who invest time, money, and skills to install PV systems on their own homes.

System Output Warranties

In the Committee Draft Guidebook for the Emerging Renewables Program, the rebate reservation request form required a warranted system energy output estimate (kWh). The warranted energy output was required on the reservation request form together with identification of the calculation method used to determine the system energy output (kWh). This requirement was intended to provide realistic and warranted performance expectations, accounting for such factors as shading, insolation levels, and installation orientation.

- ***California Solar Energy Industries Association***

  The CalSEIA stated that while they believe it is a good idea to let customers know how much energy production to expect from their system, requiring a warranty on that production is unrealistic. Too many circumstances are beyond the industry's control that impact the energy production of the system, such as weather, trees being planted, dirty panels, etc. Companies will still be required to provide a five-year comprehensive system warranty that basically say the equipment is going to perform.

- ***Allied Sun Technologies, Solel Solar Systems, Renewable Energy Concepts, Power Top Solar, Renewable Technologies, Inc., Team Solar, Sierra Solar Systems, Davis Ace Hardware, Real Goods, Solarcraft Services Inc.***

  These parties echoed the CalSEIA's comments regarding the proposed requirement for an energy production warranty.

- ***American Wind Energy Association***

  The AWEA claimed that an energy production warranty is problematic for wind, even more so than for solar because the resource is more uncertain, with greater annual resource variations. The AWEA recommended warranting power performance rather than energy performance to capture the equipment degradation and down time.

- ***Southern California Edison***

  The SCE encouraged the Energy Commission to require a warranty on energy output because of the issue of consumer expectations. In addition, the SCE stressed that with a 20 percent renewable standard, there is the question of how to account for the contribution of these small systems to that number. The SCE understood the complexities of a warranty and its meaning from a legal standpoint, but argued that the state needs credible data on a continuous basis to confirm that the RPS is being met.

- ***Schott Applied Power***

  Schott stated that the concept of an energy production warranty is correct, and that the uncertainties are manageable, particularly if the customer is made responsible for monitoring the solar array and for not building or planting trees that will shade the system.

Funding Split between Residential/Commercial Systems

The Committee Draft Guidebook for the Emerging Renewables Program originally proposed to allocate SB 1038 funds by system size category as follows: systems less than 30 kW are allocated $108,125,000, while the pilot performance-based program for systems 30 kW and above is allocated approximately $10,000,000.

- ***Sacramento Municipal Utility District***

  The SMUD contended that it was unnecessary to allocate the full five years of funding for the program at this point and also believes that it was unclear why so little is allocated to commercial systems. The SMUD also stated that the CPUC program supporting systems 30 kW and above is set to expire at the end of 2004, and therefore very little money will be available post-2004 for any large commercial systems.

- ***California Solar Energy Industries Association and various parties***

  The CalSEIA and others stated that they disagreed with the Committee-proposed funding split between residential and commercial systems, and emphasized that they want the Energy Commission to stay engaged in funding large systems. They proposed a split of 70 percent of the funding for systems 30 kW or less, 25 percent for large systems, and 5 percent for a performance-based pilot program, with any overlap in the CPUC program handled by making systems eligible for one program or the other, but not both.

- ***Renewable Technologies, Inc.***

  The RTI stated that because of the availability of the CPUC funding for large systems, all funds currently proposed for large systems should be reallocated to small systems.

Interconnection Agreement Requirement

The Committee Draft Guidebook for the Emerging Renewables Program required a copy of the original utility interconnection agreement to be submitted before the rebate payment could be issued.

- ***Power Top Solar***

  Requiring a copy of the utility interconnection agreement before payment of the Energy Commission's rebate makes application processing time longer and increases the cost of capital to install these systems.

- ***Renewable Technologies, Inc.***

  Requiring a copy of the utility interconnection agreement adversely affects retailers by increasing the turnaround time for rebate processing.

- ***Team Solar, ReGrid Power, Harmony Solar, Solarcraft Services, Inc.***

  These companies all commented that small companies will be hit particularly hard by the proposed interconnection requirement as they work on a very tight cash flow. Adding a 60-day wait for an interconnection agreement to the time they already have

to float the rebate to the customer will force their company to borrow money during the interim to stay in business. In some instances, it took 120 days to get a utility interconnection agreement. The Team Solar suggested that the requirement be changed to require the company to submit a copy of the application for the utility interconnection agreement prior to payment of the rebate and submit proof later that the interconnection has been completed.

Performance-Based Incentive System

The Committee Draft Guidebook for the Emerging Renewables Program proposed a pilot performance-based incentive system for systems larger than 30 kW (from 30-50kW for wind systems) based on the annual energy output of the system. The pilot system was allocated approximately $10 million.

- ***Sacramento Municipal Utility District***

  The SMUD stated that a performance-based incentive system is a good idea, but the goal should be to set a performance-based incentive which has the same economic impact of the current up-front based incentive payment. In SMUD's opinion, the currently proposed incentive levels do not do that. SMUD suggested delaying the implementation of performance-based incentives until the Energy Commission has had time to really analyze it economically in consultation with the industry to understand fully the impact of such incentives on the industry's ability to sell its product.

- ***California Solar Energy Industries Association***

  The CalSEIA proposed allocating only five percent of the funding for a performance-based incentive system, and recommended that the Energy Commission work with the industry members over an extended period of time to develop a functional system. The CalSEIA supported the concept of a performance-based system, but because of the complexity in the market, the concept needs to be carefully thought out for the program to function in the market.

- ***Schott Applied Power***

  Schott supports the concept of a performance-based system, but indicated that the Energy Commission's proposal would devastate the commercial scale market in California. Schott asserted that the Energy Commission plan in effect slashes the commercial scale rebate by 40-60 percent. Schott recommended that the Energy Commission spend at least a year doing a systematic and careful assessment of what a performance-based system should look like and, in the meantime, have commercial scale systems operate under the same principles as the under 30 kW systems.

- ***Tor Allen, Rahus Institute***

  Mr. Allen stated that while he enthusiastically supports performance-based incentives, he believed that because of the availability of the CPUC program for large systems, no one would apply for the Energy Commission incentives if they were tied to performance.

- ***Sun Light and Power Company***

  Sun Light and Power Company expressed support for performance-based incentives but stated that they should be offered on a selective basis. They believed that as the program is supposed to be a pilot program, it should be smaller and not include all of the over-30 kW systems.

- ***David Saul, Solel Solar Systems***

  Solel Solar Systems supported performance-based incentives but believed the threshold for solar thermal facilities was too high and was based on the performance on the large SEGS plants, which because of their size, location, and insolation can produce much higher levels than the systems Solel Solar Systems proposes to install. Solel Solar Systems asked that the Energy Commission make the threshold symmetrical for PV and solar thermal.

Funding Allocation

The Energy Commission's *Investment Plan* originally recommended that emerging technologies should be allocated 15 percent of the Renewable Resource Trust Fund. However, SB 1038 changed that allocation to 17.5 percent.

- ***Renewable Technologies, Inc.***

  The RTI stated that the one percent of funding allocated to the Consumer Education Account should be reallocated to the Emerging Renewables Program, arguing that this change could result in 300 more kilowatts of installed PV capacity, which would translate into 120 more systems.

- ***Schott Applied Power Corporation***

  Schott stated that funding from the Customer Credit Account should be reallocated to the Emerging Renewables Program. Schott argued that green markets have been decimated by changes in the electricity market, and that those funds could still be used to encourage customers to buy green power by helping them to generate their own green power.

- ***California Solar Energy Industries Association***

  The CalSEIA claimed that the capability of customers to buy green power directly is gone in California and therefore, recommended that all unused funds in the Customer Credit Account, both historical and in the future, be reallocated to the Emerging Renewables Program. The CalSEIA argued that the way for customers now to buy green power is to put solar, wind, or other qualified emerging renewables on their own facilities.

Miscellaneous Issues

Performance Meter Requirement

The Committee draft guidebook required system performance meters for all systems, with final inspection signoff before March 31, 2003. This requirement is to ensure that the customer can determine the amount of energy produced by the system.

- ***Tor Allen, Rahus Institute***

  Mr. Allen supported the system performance meter requirement. He said it does not cost that much more and provides important feedback. He asked the Commission to consider the potential for data to be lost during replacement or repair of the inverter.

- ***Graham Owen, Go Solar Co.***

  Mr. Owen stated that he believed performance meters would leave him vulnerable to such things as smoke from forest fires, bird droppings on PV panels, and vegetation growth. He asked, who would monitor the meters? He also raised the point that performance meters would make it easier for utilities to impose exit fees on homeowners who install PV systems.

- ***Doby Fleeman, Davis Ace Hardware***

  Mr. Fleeman stated that consumers would compare data from their performance meters to information provided by the salesman who sold them the system. If the system was not performing as stated by the salesman, the consumer would be likely to file a complaint with the Commission, despite attempts to explain that Standard Test Condition (STC) or PVUSA Test Condition (PTC) panel ratings differ from installed system performance conditions.

Inverter Efficiency

In the Committee Draft Guidebook for the Emerging Renewables Program, inverter ratings were changed from peak efficiency to efficiency at 75 percent of load.

- ***Sacramento Municipal Utility District***

  The SMUD argued that inverters have different efficiency curves and do not all peak at 75 percent of full load output. The SMUD suggested that the Energy Commission needs to determine some way to average inverter efficiency so that it does not favor certain manufacturers over others.

- ***California Solar Energy Industries Association***

  The CalSEIA stated that if they had to pick a number for inverter efficiency, the 75 percent number would be as good as any because it is near the center of the bell shaped curve. The CalSEIA also said they believe the proposal is an improvement over the current system of using the peak efficiency, and that for simplicity's sake they support the use of the 75 percent number.

- ***Power Top Solar***

  Power Top Solar claimed that, in their opinion, changing the inverter efficiency rating used in the rebate calculations from peak efficiency level to 75 percent efficiency level will reduce the rebate amount by several percentage points, and represents a de facto decrease in the ongoing rebate amount. Power Top Solar suggested that the Energy Commission should consider that in the context of other rebate reductions.

Special Funding for Affordable Housing Projects

Pursuant to Assembly Bill 58 (AB 58, Chapter 836, Statutes of 2002), the Committee Draft Guidebook for the Emerging Renewables Program established a rebate for affordable housing projects up to 50 percent higher than the standard rebate level, not to exceed 75 percent of total system cost. The total installed cost of the system may not exceed $8.50 per watt (Energy Commission rated), and the applicant must show that the housing project has adopted measures to promote energy efficiency. Each residential unit in the housing project must have an individual meter.

- ***Ryan Park, Renewable Energy Concepts***

  Mr. Park recommended that a cap be placed on the total dollar amount that the Emerging Renewables Program would allocate to affordable housing projects. He argued that the rebate would support large companies that specialize in new housing development rather than small PV businesses. He also stated that if the intent of the Emerging Renewables Program is to use the rebate program to install as many PV systems as possible, the program should not establish such a high rebate level for affordable housing.

Special Programs

Funding for Systems in Municipal Utility Service Areas

The Committee Draft Guidebook for the Emerging Renewables Program limited funding for systems installed in municipal utility service areas to $4/watt for combined funds from the municipal utility and the Energy Commission.

- ***Silicon Valley Power***

  Silicon Valley Power said that the $4 a watt cap proposed for combined funds from utility incentive programs and the Energy Commission program was inappropriate for municipal utility customers, particularly as their customers are paying a baseline rate of 6.5 cents/kWh, and 7.5 cents/kWh for usage over baseline. Silicon Valley Power claims that $4/watt is not enough to encourage solar installations in their district, based on their experience with a $4/watt program that in two years resulted in zero applications for the incentive.

- ***Southern California Edison***

  The SCE believed the Energy Commission should continue to have the incentive equal between the municipal utility sector and the investor-owned utility sector, across the state. The SCE argued that while cost effectiveness of the system depends on rates, the IOUs have diverse rate schedules. Therefore, depending on the market, cost effectiveness and rates of returns differ, which in the SCE's opinion is not an argument for changing the incentives between the municipal utilities and the IOUs.

Solar Schools Initiative

The Committee Draft Guidebook for the Emerging Renewables Program established the Solar Schools Program that would allow systems up to 30 kW to be eligible for schools in investor-owned utility service areas and systems up to 10 kW to be eligible for schools in publicly owned electric utility service areas.

- ***Solar Depot***

  Solar Depot said that while they support installing solar on schools, they believe the Solar Schools Program is poorly designed. In particular, they assert that the money from the Attorney General's Office is limited and will get used up very quickly. Instead of paying 90 percent of system cost, they suggested that the program should only pay for 65-70 percent of installation costs, which would allow more systems to be installed and still save the schools a significant amount of money.

- ***Tor Allen, Rahus Institute***

  Mr. Allen stated that the $8.50/watt level for schools may be too low, as costs to install solar at schools are often higher than for a typical residential system. Mr. Allen also recommended that school districts that overlap municipal utility and IOU service territories be allowed funding for more than 30 kW of installation.

ENDNOTES

[1] See Appendix B.
[2] Notice of Staff Workshops on the Renewable Energy Program, October 16, 2002, Attachment A: "Payments from the Existing Account for generation after December 31, 2001 were suspended pending passage of legislation authorizing the implementation of the extended REP. SB 1038 passed on September 12, 2002 and is effective on January 1, 2003, implying the potential for one year of retroactive payments (for 2002 generation)."

APPENDIX B

March 8, 2002 Letter to
Existing Renewable Resources Account Participants

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

March 8, 2002

To: Existing Renewable Resources Account Participants

Please be advised that payments under the Existing Account will be suspended for all generation after December 31, 2001. Electricity generated after this date is expected to be eligible for payments under an extension to the Commission's Renewable Energy Program. Assembly Bill 995 and Senate Bill 1194 authorized this extension, but legislation authorizing the expenditure of funds collected under the extension has not been passed. In addition, certain Existing Account payment and eligibility provisions under the SB 90 program differ in important ways from what is proposed for the program extension, and guidebook changes may be necessary to conform to the new legislation. Because of this uncertainty, the Commission's Environmental and Energy Infrastructure and Licensing Committee has decided to suspend payments until the legislation authorizing the expenditure of the extension funds has been approved by the legislature.

We intend to make payments for any eligible electricity generated after January 1, 2002 under the terms of the new legislation. If the new legislation authorizes funding for only post-legislation generation (i.e. electricity generated after the bill is enacted into law), we intend to make payments for pre-legislation generation under the existing SB 90 program, if funds are available and the payments are not prohibited or otherwise contrary to the new legislation. These payments would require guideline changes, since the current guidelines for the Existing Account do not authorize payments for generation after December 31, 2001.

In order to qualify for any back payments, facilities are **encouraged** to continue submitting their monthly invoices according to the following schedule:

Billing Month	Invoice Due Date
January 2002	March 11, 2002
February 2002	April 10, 2002
March 2002	May 10, 2002
April 2002	June 10, 2002

If you have any questions, please contact me at: voice, (916) 654-5168; fax, (916) 653-2543; or e-mail, tgoncalv@energy.state.ca.us.

Thank You,

Tony Gonçalves
Renewable Energy Program
Manager, Existing Renewable Resources Account